REMARKS

Claims 1-10 and 12-29 are currently pending in the subject application, and are presently under consideration. Claims 1-10, 12-18, 20-24, 28, and 29 stand rejected. Claims 19 and 25-27 have been indicated as allowable. Claims 1, 10, 14, 20, 28, and 29 have been amended. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I.   Interview Summary

Representative for Applicant thanks Examiner Nghiem for the opportunity to interview the Present Application on November 2, 2005. Examiner and Representative for Applicant reached an agreement that Representative for Applicant will amend the claims to clarify that "single port measurements" correspond to measurements at a one port while the other ports of the network are not measured. The independent claims have been amended consistent with the agreement reached during the telephone interview. Examiner agreed to reconsider the claims, as amended in this Response to the Office Action dated October 20, 2005, in view of Metzger, et al. As discussed during the telephone interview, Representative for Applicant believes that this clarification as to what constitutes single port measurements distinguishes over the teachings of Metzger, et al.

II.   Objection to Information Disclosure Statement

The Information Disclosure Statement filed August 12, 2005, has been objected to on the basis that it fails to comply with the provisions of 37 CFR 1.97, 1.98 because the reference "Vector Network Analyzers" lacks a publication date. Representative for Applicant respectfully submits that no date is available for this reference as it is a website. Additionally, the website has changed since it was printed and submitted in the Information Disclosure Statement, and as such, no date of last modification for the submitted reference is available. Representative for Applicant respectfully requests consideration of the reference.

III.   <u>Objection to Specification</u>

The Specification has been objected to on the basis of the Specification containing an informality. Appropriate correction has been made in the above Amendment to the Specification section. Withdrawal of the objection is respectfully requested.

IV.   <u>Rejection of Claims 1-10, 12-17, 20-24, 28, and 29 under 35 U.S.C. 102(e)</u>

Claims 1-10, 12-17, 20-24, 28, and 29 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,594,604 to Metzger, et al. ("Metzger"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claims 1, 10, 14, 20, 28, and 29 have been amended, pursuant to the above-cited telephone interview, to clarify what is meant by single port measurements. Specifically, amended claims 1, 10, 14, 20, 28, and 29 each recite that each single port measurement is a measurement at one port of the network while the other ports are not measured. Claims 10, 14, 20. 28 and 29 have also been amended to recite that each of the single port measurements at one port occur while the other ports are one of open or shorted. For example, the present application provides support for these amendments at page 10, ll. 11-12 and at page 10, ll. 18-21.

It is respectfully submitted that this recitation of single port measurements claims 1, 10, 14, 20, 28, and 29 clarify the distinctions between such claims and the approach that is taught by Metzger. Metzger teaches that waveform measurements of a network are performed on a network that is interconnected between two directional couplers, one connected to each of the two ports (see FIGS. 5-7 and 16 of Metzger). The directional couplers each link either a signal source or a load impedance to each of the two ports, and the S-parameters for the network are determined by forward and reverse testing (see, *e.g.*, Metzger, at col. 3, ll. 14-29; col. 7, ll. 58-67; and col. 8, ll. 1-17). Forward and reverse testing, as taught by Metzger, are not single port measurements, as recited in amended claims 1, 10, 14, 20, 28, and 29, but are instead multi-port measurements of S-parameters at both ports of the DUT while connected to the directional couplers. Thus, Metzger teaches only multi-port measurements to determine S-parameters of a network, and not single port measurements, as recited in amended claims 1, 10, 14, 20, 28, and 29. Additionally, the description of Metzger relating to single port measurements with respect to FIGS. 8-15 and FIGS. 18-25 relate solely to measurements obtained during a calibration process to determine error parameters (the E-parameters), and not S-parameters as is recited in amended claims 1,

10, 14, 20, 28 and 29. Therefore, Metzger does not anticipate amended claims 1, 10, 14, 20, 28, and 29. Withdrawal of the rejection of claims 1, 10, 14, 20, 28, and 29, as well as claims 2-9, 12, 13, 15-18, and 21-24 which depend, respectively, therefrom, is respectfully requested.

Claim 3 recites that the S-parameter calculator determines reflection coefficients based on the waveform parameters, the S-parameter calculator determining the S-parameters based on the reflection coefficients. In the Response to the Office Action dated March 16, 2005 (pages 10-11), filed on August 10, 2005, Representative for Applicant proffered an argument against the anticipation of claim 3 by Metzger. The Office Action dated October 20, 2005 (page 8), acknowledged an argument for claim 3, but did not address the specific argument. Specifically, the Office Action dated October 20, 2005, asserts that Metzger teaches determining reflection coefficients based on waveform parameters at column 2, lines 22-26. However, this cited section refers to the S-parameter S_{22} as an "output reflection coefficient." This characterization of an S-parameter as a reflection coefficient is inconsistent with the recitations of claim 3 in that it does not make sense to determine the S-parameters based on an S-parameter, as is being suggested by the Office Actions dated March 16, 2005, and October 20, 2005. The rejection of claim 3 is, therefore, internally inconsistent in view of the teachings of Metzger upon with the rejection is based. Accordingly, Metzger does not anticipate claim 3. Withdrawal of the rejection of claim 3, as well as claim 4 which depends from claim 3, is respectfully requested.

Claim 5 recites that the network is a two-port network and that the single port measurements comprise measurements implemented at at least three of the first port while the second port is open, the first port while the second port is shorted, the second port while the first port is open, and the second port while the first port is shorted. The Office Action dated October 20, 2005 (page 8), asserts that Metzger teaches that the procedure for calibration of a DAP system is or would be implemented on a network. Representative for Applicant respectfully disagrees. The short circuits and open circuits in the calibration of a DAP system taught by Metzger are test setups that are performed on the directional couplers of the DAP system (Metzger, col. 4, ll. 5-12). The directional couplers are the interfaces to which a network is attached when determining the network's S-parameters (see, *e.g.*, Metzger, FIG. 5). Therefore, Metzger makes the distinction between directional couplers and a network, as the test setups are performed on directional couplers, and not a network. In addition, the test setup for calibration of the DAP system is to determine a set of error parameters (E-

parameter) associated with the DAP system (Metzger, col. 4, ll. 3-5). In contrast, claim 5 is recites a system that computes S-parameters based on certain measurements recited therein, and not E-parameters. Accordingly, Metzger does not anticipate claim 5. Withdrawal of the rejection of claim 5 is respectfully requested.

Claim 6 recites determining reflection coefficients comprising at least three of a first reflection coefficient of a first port while each of the other plural ports is open, a second reflection coefficient of the first port while each of the other plural ports is shorted, a third reflection coefficient of a second port while each of the other plural ports is open, and a fourth reflection coefficient of the second port while each of the other plural ports is shorted. The Office Action dated March 16, 2005 (page 6), specifically states that Metzger does not teach the elements of claim 6. However, the Office Action dated October 20, 2005 (at page 4 as well as in the Response to Arguments section at page 8), rejects claim 6 as anticipated by Metzger by grouping claim 6 with the rejection of claim 5. Representative for Applicant respectfully submits that the Office Action dated October 20, 2005, has not met the prima facie burden in rejecting claim 6. As discussed above regarding claim 5, Metzger teaches open and short circuit measurements to calibrate directional couplers, and not to determine reflection coefficients of a network. Furthermore, Metzger teaches that these measurements are to determine E-parameters for the test system, and not reflection coefficients as recited in claim 6. Since Metzger fails to teach determining reflection coefficients, as recited in claim 6, withdrawal of the rejection of claim 6 is respectfully requested.

Claim 7 recites that the S-parameter calculator computes the S-parameters of the network based on a subset of less than all possible reflection coefficients for the network. The Office Action dated October 20, 2005, has not responded to the argument proffered by Representative for Applicant in the Response to the Office Action dated March 16, 2005 (pages 11-12), which was resubmitted on August 10, 2005. As such, the argument has been repeated below. The Office Action dated October 20, 2005 (page 4), asserts that Metzger teaches claim 7 by the measurement at one port P1. Representative for Applicant respectfully disagrees. The purported measurement at port P1, as taught by Metzger, includes measurements at both ports P1 and P2 while a signal generator drives the port P1. Metzger at Col. 2, ll. 50-63. In particular, the set of measurements when P1 is driven with an incident wave a1 yields a set of waveform parameters: an incidence wave measured at port P1 (denoted by a_1), a reflected wave measured at port P1 (denoted by b_1) and a reflected wave measured at port P2 (denoted by b_2). From this set of measurements at both P1 and P2, two

S-parameters (S_{11} and S_{21}) can be calculated (Metzger, col. 2, ll. 50-63). Metzger further teaches that a measurement is made at both ports again while the other port P1 is driven by an incident wave to stimulate port P1 to provide another set of waveform parameters a_2, b_1, and b_2, from which the other two S-parameters (S_{12} and S_{22}) can be calculated (Metzger, col. 2, line 64 through col. 3, line 6). Therefore, the measurement at one port P1, as taught by Metzger, does not teach that the S-parameters of the network can be computed based on a subset of less than all possible reflection coefficients for the network, as recited in claim 7. Instead, Metzger teaches that the reflection coefficients b_1 and b_2 from both sets of multi-port measurements are utilized to compute the set of S-parameters. Thus, Metzger is silent as to computing S-parameters of a network based on a subset of less than all possible reflection coefficients for a network, as recited in claim 7. Withdrawal of the rejection of claim 7 is respectfully requested.

Metzger does not anticipate claim 12 for at least the reasons discussed above regarding claim 5. Withdrawal of the rejection of claim 12 is respectfully requested.

Claims 13 and 17 recite that the set of reflection coefficients comprises a subset of less than all possible reflection coefficients for the network. For at least the reasons described above regarding claim 7, Metzger does not anticipate claim 13. Withdrawal of the rejection of claim 13 is respectfully requested.

Metzger does not anticipate claim 21 for at least the reasons described above regarding claim 3. Withdrawal of the rejection of claim 21 is respectfully requested.

Metzger does not anticipate claim 23 for at least the reasons stated above regarding claim 6. Accordingly, withdrawal of the rejection of claim 23 is respectfully requested.

For at least the reasons stated above regarding claim 6, Metzger does not anticipate claim 24. Withdrawal of the rejection of claim 24 is respectfully requested.

V.   Rejection of Claims 18 Under 35 U.S.C. §103(a)

Claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Metzger in view of U.S. Patent No. 5,548,538 to Grace, et al. ("Grace"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 18 recites that the computing means comprises means for determining plural sets of the S-parameters for the network based on different respective sets of the reflection coefficients. Claim 18 depends from amended claim 14 and thus should be allowable for at least the same reasons as claim 14. The addition of Grace does not cure the deficiencies of

Metzger to teach single port measurements. In contrast to the contention in the Office Action, there is nothing in Grace (similar to Metzger) to suggest that plural sets of S-parameters are determined for a network based on different respective sets of the reflection coefficients. Instead, Grace teaches only that the measurements of reflection coefficients of a short, open and load are used to determine a set of error terms for two error boxes E_A and E_B. See Grace at Col. 1, ll. 33-39. Since Metzger and Grace, taken individually or in combination, fail to teach or suggest the method of claim 18, Applicant respectfully requests withdrawal of the rejection of claim 18.

VI.   CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant's undersigned attorney at (216) 621-2234, Ext. 106.

No additional fees should be due for this response. In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to Deposit Account No. 08-2025.

Respectfully submitted,

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